

I am indebted to Mr. Titian Peale for a very accurate drawing of this animal, with its accompanying details, which are exhibited on the annexed plate.

fig. 1. *Isodon pilorides*.

fig. 2. Liver—a. Gall bladder. b. Portion of the diaphragm.

fig. 3. Cranium.

fig. 4. A row of teeth.

fig. 5. Tooth of the superior jaw. a. Exterior view.
b. Interior view. c. Anterior side.

Description of a Squalus, of a very large size, which was taken on the coast of New-Jersey. By C. A. LESUEUR. Read Nov. 5, 1822.

During the two or three last weeks, an enormous cartilaginous fish of the family of the Squali has been publicly exhibited in this city, under the deceptive name of “Leviathan or Wonderful Sea Serpent;” and in order the more effectually to attract the attention of the multitude, the long appendices which generally distinguish the male, and which accompany the ventral fins, were declared to be feet. This individual is analogous to several others of its proper genus, which, on the 21st of November, 1810, were enclosed by some fishermen’s nets on the coast of Normandy, and which were afterwards taken to Dieppe for sale. The largest of these, which measured 29 feet 4 inches in length, and 16 feet in cir-

cumference at the base of the dorsal fin, was transported entire to Paris, where it was carefully examined by Mr. Blainville, who published a detailed account of it in the *Annales du Museum* to. 18, p. 88, pl. 6, fig. 1.

The individual now exhibiting, having appeared on the coast of New-Jersey nearly at the same season that the reputed "Sea Serpent" was introduced to the attention of the public, the preceding year, it was believed to be no other than the same animal.

The anticipation of a lucrative exhibition of this animal, animated the courage of many of the inhabitants of the coast, and determined them to attempt its capture. Armed with muskets and harpoons, they attacked the animal at 7 o'clock in the evening, and continued their efforts to subdue it until the following morning, when, having received numerous balls and harpoon wounds, it finally grounded upon the shore of Brown's point, when it became evident that they had been contending, not with an enormous serpent, but with a gigantic shark.

The liver yielded four barrels of oil, of about 32 gallons each. The skin, already injured by the numerous wounds, was still further mutilated in several parts in separating it from the body ; it was, however, at length, extended upon a frame, which imitated the form of the animal, though the attitude is forced, the branchial openings too widely extended, the head too much elevated, and the mouth so much expanded as to admit a man in a sitting posture.

Notwithstanding these inaccuracies however, much credit is due to the individual who prepared this skin, as it presents a good idea of the form and magnitude of this elephant shark.

The following description and remarks were made of the animal in the state above described :

Body fusciform, more elongated towards the tail than the *S. Peregrinus*, described by Mr. Blainville, *Ann. du Mus. d'Hist. Nat.* tom. 18, p. 88, tab. 6, fig. 1.

Total length, when recent 32 feet 10 inches, circumference 18 feet—of the dried skin 22 feet, and 9 feet 7 inches and 4 lines in circumference.

Skin rude to the touch, particularly on passing the hand forward, being covered with numerous small, horny, somewhat curved points, of the length of about one-third of a line. These small points are assembled in groups so as to form numerous undulated abbreviated bands, united at their extremities and again dividing; their breadth, on the middle of the body, is about two lines, and they give to the whole surface the appearance of being wrinkled; these bands or wrinkles are transverse on the whole body from the termination of the branchial openings to the posterior extremity of the caudal carina, where they disappear; on the head, throat, and behind the spiracle they are longitudinal, upon the branchial lamina and above the pectoral fins they become oblique, on the latter their direction complies with the movement of the articulation of the fins; all the fins are

destitute of wrinkles, the appendices which accompany the ventral fins are rugose and transversely wrinkled on their superior part, and longitudinally wrinkled on the middle; these wrinkles are more profound than those of the skin of the body. *Head* very small; *rostrum* very short, obtuse, glabrous, covered with mucous pores of different sizes, the largest ciliated at their interior circumference and placed before the eyes, the middle sized ones irregularly disposed, covering the upper part and sides of the rostrum, the small ones are arranged on a line which passes above the eyes and is prolonged in front of the rostrum; *eyes*, these being replaced by a hollow hemisphere of glass filled with plaister, with a round black spot in the middle, I was unable to ascertain their true form and dimensions; they are at the distance of about $6\frac{1}{2}$ inches from the tip of the rostrum, and very near to the margin of the superior lip; *nostrils* placed before the eyes and beneath the rostrum, but having been distended with cylinders of wood, their form cannot be determined; *spiracles* very small, placed above and a little behind the angle of the jaw, each corresponding with a long interior opening in the mouth between the superior jaw and the first branchial opening; *branchial apertures*, five on each side, the anterior ones the largest, extending from the superior part of the neck to the under part of the breast, where they appear confluent with those of the opposite side, the posterior opening smallest; the space between the first pair on the upper part of

the neck is 3 inches and 4 lines, that between the fifth pair is about 2 feet 18 lines; *mouth* very large, 1 foot 7 inches between the angles, and 2 feet 10 inches from the tip of the inferior jaw to a central point between the nostrils; the jaws armed with teeth of different forms, those of the superior jaw occupying, on each side, a space of 1 foot and 6 inches in length by more than one inch in width, and the armed space of the inferior jaw on each side is 1 foot $8\frac{1}{2}$ inches long by 1 inch wide; *teeth* generally curved and turned inwards towards the throat, their sides slightly edged, without any appearance of distinct and regular serratures; some small rugosities, only, are perceptible on the edge; *on the superior jaw* they are subconic at the anterior extremity and at the angle of the mouth, both of which are smaller by one-third than those which occupy the intermediate space, and have but a single point to each, which in the greatest number is flattened and truncated; the four or five last ranges at the angles of the mouth are flattened, subtriangular, and recline upon each other to the number of four or five ranges; the intermediate teeth are larger, of the length of about 4 lines, by 3 lines in width at their bases, they are subtriangular, with one or two grooves on their exterior face, which indicate the union of three points of which they appear to be composed, two of these points are united, and the other is often detached, and very distinct, presenting a bifid appearance, some of the teeth exhibit three points, but these are rare; *on the inferior*

jaw the teeth are rather larger than those of the superior jaw; towards the anterior extremity and near the angle of the jaw they are a little elongated and lanceolate, less conic but somewhat more compressed; the intermediate ones are bifid and subtrifid, those of the anterior extremity are sensibly emarginate; these teeth are not implanted deeply in the skin, and are disposed in 7 or 8 distinct ranges in the middle, the younger ones being on the interior range; *fins* eight; *first dorsal* triangular, a little emarginated, extended to a point, detached posteriorly, and placed equidistant. Between the base of the caudal fin and the tip of the rostrum, its height is 2 feet 8 or 10 inches, length 2 feet 10 inches, including the posterior pointed lobe which is $8\frac{1}{2}$ inches long; *second dorsal* very small, subtriangular, with a posterior lobe detached at tip, its height is $8\frac{1}{2}$ inches and total length 17 inches, it is placed before the line of the anal fin, and at the distance of 3 feet $3\frac{1}{2}$ inches from the base of the caudal; *pectorals* large, placed immediately behind the fifth branchial aperture, at the inferior part of the body, their extremity surpassing a little the base of the first dorsal, they are strong anteriorly, and flexible posteriorly, of the length of 4 feet 1 inch, and 2 feet 1 inch and 8 lines in width; *ventrals* subtriangular, nearly intermediate between the first and second dorsals, anteriorly flexible, and of the length of 1 foot 5 or 6 inches, by 2 feet and 2 inches in width; the two organs, or large, subcylindric appendages which are attached to them are pro-

foundly striated, on their superior portion these striæ are transverse and very rugose, on their middle portion they are oblique, and towards the extremity they have a longitudinal direction and are rugose; these appendices are at present of the length of 2 feet 8 inches, but having been detached from the animal, and in order to skin and prepare them, and again adjusted in their proper situation, their form seems to have been entirely lost, a large groove, however, and two small appendices are still recognisable; *anal* subtriangular, with a detached pointed lobe behind, placed behind the second dorsal, its length is 1 foot 3 or 4 inches, and height 7 inches 6 lines; *tail* 3 feet 3 inches long from the base of the second dorsal to the base of the caudal fin, at which latter point I did not perceive any indentation like those which exist in the *Squalus peregrinus* of Blainville (Ann. du Mus.) and in many other species, as well as in some that we observed on the coast of New Holland; possibly this character may have existed in the animal under consideration, and their absence may be attributable to dessication; *caudal fin* large, straight, elevated, falciform, of the length of 5 feet from the extremity of one lobe to that of the other; superior lobe 4 feet 3 inches and 6 lines long, inclusive of the small triangular lobe at its extremity of 8 inches 6 lines; inferior lobe short and wide; on each side of the tail is a carina of about 1 foot 6 inches or 2 feet long, which crosses the base of the caudal fin.

From this description of the dried skin of this gi-

gantic species, it is easy to perceive the relations of its form to other species which attain to an equal magnitude, such as the *S. Gunnerianus*, *S. Homianus* and *S. Peregrinus*. But it is with the latter and particularly with the individual captured on the coast of Normandy that our species is most closely allied. It resembles it in the form and number of the fins and the vast openings of the branchia; but the form of its teeth are totally different, those of the *S. Pelegrinus* being conic, whilst those of our species are more compressed than conic. I, therefore, propose to distinguish it by the following name and characters:

SQUALUS *ELEPHAS.

Teeth very small, numerous, curved, bicanaliculate, bifid, in the middle of the series compressed, at the extremities of the series subconic, pointed; *spiracles* very small; *branchial openings* very large, the anterior one originating on the upper part of the neck; *body* very large, lead colour, darker on the back and paler on the belly; *second dorsal* almost equal in size to the anal, and placed anterior to it; *tail* long, with a carina on each side.

Note. In confirmation of the statement relative to the indentation or notch on the tail, I here add descriptions of two species which seem to be new.

SQUALUS *SPALLANZANI.—*Peron and Lesueur.*

Spiracles none; a black spot at the extremity of the pectorals, another at the summit of the second dorsal and a third at the end of the inferior lobe of the tail; caudal fin undulated above; pectorals falciform, very narrow, situate under the two last branchial openings; head very much depressed; a lunulated emargination above and another beneath the tail.

Inhabits terre de Witt, New Holland.

SQUALUS *CUVIER.—*Peron and Lesueur.*

Head and body very thick; dorsal moderately emarginate; irregular blackish spots upon the body from the summit of the head to the caudal fin, which, on its superior portion, is also spotted; the spots are disposed in three ranges, which are rather irregular on the anterior part; a lunulated emargination above the tail, and another beneath it at the base of the fin.

Inhabits the N. W. coast of New Holland.

This lunulated emargination, which exists upon the base of the tail of the Squali here described, are also observable on a species of the genus *Caranx*, that Peron and myself examined at the port of King

George in *la terre de Nuyts*, and to which Peron applied the name of the celebrated professor and dean of the school of medicine at Paris, Mr. Le Roux. This species of *Caranx* is of a very large size, covered with moderately elongated scales; dorsal fins two, the anterior small and consisting of five spinous rays; the second low, very long, elevated anteriorly, and composed of twenty-three much divided rays, of which the first is robust, osseous and shorter than the second ray; pectorals with twenty undivided rays; thoracics with seven rays, the three anterior ones osseous, simple; anal entire shorter than the second dorsal, elevated anteriorly, lower on the posterior portion and supported by sixteen rays, of which the first and second are very strong and bony, the others branched; caudal emarginate, of twenty branched rays, the four or five anterior ones on each side are spinous; a carina on each side of the tail and a lunulated emargination on its superior part; jaws equal.